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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
KIM, RICHARD H

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,366	CASE ET AL.	
	Examiner	Art Unit	
	Richard H Kim	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 01 August 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3,4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 8, 14, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ackerman et al. (US 5,023,881) in view of Aoyagi et al. (US 5,906,753).

Referring to claims 1, 2, 14 and 21, Ackerman et al. et al. discloses a manufactured optical device and method comprising a fixed reference (see col. 3, lines 20-23; Fig. 1, ref. 11); a first optical module having a first optical component (see col. 3, lines 18-19), the first optical module mounted to a first predetermined location on the fixed reference (see col. 3, lines 16-29); and a second optical module having a second optical component (see Fig. 1, ref. 12, 13), the second optical module mounted to a second predetermined location on the fixed reference (see col. 3, lines 20-23); wherein the first and second optical modules are oriented relative to a reference standard (see col. 3, line 54); and the first and second predetermined locations interact with one another in a desired manner (see col. 3, lines 59-63). However, the reference does not disclose that the first and second optical modules are prealigned relative to the reference standard, wherein the first and second optical modules carry reference features and the prealignment is with respect to the reference features.

Aoyagi et al. discloses an optical module having an optical component prealigned relative to a reference standard (see col. 7, lines 28-38), wherein the module carries reference features and the prealignment is with respect to the reference features (see col.7, lines 30-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to prealign the first and second optical modules relative to the reference standard, wherein the first and second optical modules carry reference features and the prealignment is with respect to the reference features in order to further provide "excellent coupling efficiency" thereby obtaining high yield (see col. 2, lines 53-59).

Referring to claim 3, Ackerman et al. and Aoyagi et al. disclose the device previously recited. Ackerman et al. et al. further disclose that the fixed reference carries reference features at the first and second predetermined locations (see Fig. 1, ref. 11). It is the position of the examiner that the edges of the fixed reference inherently serves as reference features.

Referring to claims 4-6, Ackerman et al. and Aoyagi et al. disclose the device previously recited. However, Ackerman et al. does not disclose that the first and second optical module comprise a first and second prealignment mount; and the first and second optical component is mounted to the first and second prealignment mount, respectively, wherein the first optical component is fixed at a prealigned orientation by the first prealignment mount.

Aoyagi et al. discloses an optical module comprising an alignment mount, wherein an optical component is fixed at a prealigned orientation by the prealignment mount (see col. 7, lines 28-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first and second optical module comprise a first and second

prealignment mount; and the first and second optical component mounted to the first and second prealignment mount, respectively, wherein the optical component is fixed at a prealigned orientation by the first prealignment mount in order to further provide "excellent coupling efficiency" thereby obtaining high yield (see col. 2, lines 53-59). Further, such a modification would provide stability to the device by mounting the component on a rigid surface.

Referring to claim 8, Ackerman et al. and Aoyagi et al. disclose the device previously recited. Ackerman et al. further discloses a prealignment mount coupling adapted to fixedly couple the first optical component to the first prealignment mount at a predetermined orientation (see col. 4, lines 8-12).

Referring to claim 22, Ackerman et al. and Aoyagi et al. disclose the method previously recited. However, the references do not disclose a computer software to implement the method.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have use computer software to implement the method in order to implement the method using a computer, thereby improving the efficiency in which the method is implemented. Moreover, intended use does not carry patentable weight.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ackerman et al. and Aoyagi et al., in view of Green et al. (US 6,470,120 B2).

Ackerman et al. and Aoyagi et al. disclose the device previously recited. However, the references do not disclose that the first optical component can move with six degrees of freedom relative to the reference features prior to being fixed to the first prealignment mount.

Green et al. discloses a an optical component that can move with six degrees of freedom (see col. 4, lines 61-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first optical component move with six degrees of freedom relative to the reference features prior to being fixed to the first prealignment mount in order to provide a period of adjustability before fixing the component onto the substrate, thereby insuring precision alignment. Moreover, such a modification allows "optimal coupling" (see col. 4, lines 63-64).

4. Claims 9-12 and 15-20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ackerman et al. and Aoyagi et al., in view of Setoguchi (US 6,467,972).

Referring to claim 9, Ackerman et al. and Aoyagi et al. disclose the device previously recited. However, the references do not disclose that the optical device includes a first fixed reference coupling to fixedly couple the first optical module to the fixed reference.

Setoguchi discloses a fixed reference coupling to fixedly couple a first optical module to the fixed reference (see col. 12, lines 6-18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a fixed reference coupling to fixedly couple a first optical module to the fixed reference in order to improve the stability of the device by permanently securing the module with the fixed reference.

Referring to claims 10 and 11, Ackerman et al. discloses an optical device comprising a fixed reference (see Fig. 1, ref. 11); a first optical module comprising a first optical component

(see col. 3, lines 18-19); a first mount (see Fig. 2, ref. 18); a first mount coupling which fixedly couples the first optical component to the first prealignment mount (see Fig. 3, ref. 29); a second optical module comprising a second optical component (see Fig. 1, ref. 13); wherein the first and second optical components are oriented to optically interact with one another in a desired manner (see col. 3, lines 59-63). However, the reference does not disclose prealignment mounts; fixed reference couplings which fixedly couples the prealignment mounts to a predetermined location on the fixed reference; wherein the first prealignment mount is prealigned relative to the fixed reference coupling; a second prealignment mount coupling which fixedly couples the second optical component to the second prealignment mount at a prealigned orientation relative to the fixed reference coupling, wherein the first and second optical fixed reference couplings carry reference features.

Aoyagi et al. discloses prealignment mounts (see col. 7, lines 30-37). Setoguchi discloses a mount (see Fig. 7, ref. 103); a fixed reference coupling which fixedly couples the mount to a predetermined location on the fixed reference (see Fig. 8, ref. 122); a mount coupling which fixedly couples the optical component to the mount at a prealigned orientation relative to the fixed reference coupling (see Fig. 7, ref. 117).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ prealignment mounts; fixed reference couplings which fixedly couples the prealignment mounts to a predetermined location on the fixed reference; a second prealignment mount coupling which fixedly couples the second optical component to the second prealignment mount at a prealigned orientation relative to the fixed reference coupling, wherein the first and second optical fixed reference couplings carry reference features in order to further

provide "excellent coupling efficiency" between the optical components, thereby obtaining high yield (see col. 2, lines 53-59), while maintaining a high degree of stability.

Referring to claim 12, Ackerman et al., Aoyagi et al. and Setoguchi disclose the device previously recited. Ackerman et al. et al. further disclose that the fixed reference carries reference features at the first and second predetermined locations (see Fig. 1, ref. 11). It is the position of the examiner that the edges of the fixed reference inherently serves as reference features.

Referring to claims 15 and 16, Ackerman et al., Aoyagi et al. and Setoguchi disclose the method previously recited. Ackerman et al. further discloses placing an optical module at a predetermined location on a fixed reference prior to fixedly mounting (see Fig. 2, 3). However, Ackerman et al. does not disclose the method of prealigning the first and second optical modules prior to fixedly mounting.

Aoyagi et al. discloses prealigning an optical module prior to fixedly mounting (see col. 7, lines 30-37).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to prealign the first and second optical modules prior to fixedly mounting in order to further provide "excellent coupling efficiency" thereby obtaining high yield (see col. 2, lines 53-59), before permanently mounting the modules.

Referring to claims 17 and 18, Ackerman et al., Aoyagi et al. and Setoguchi disclose the method previously recited. However, Ackerman et al. does not disclose aligning the modules in a reference frame define by the reference standard; and fixing the first and second optical components in prealignment mounts.

Aoyagi et al. discloses aligning the modules in a reference frame defined by a reference standard, and fixing the first and second optical components in prealignment mounts (see col. 7, lines 30-37).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to align the modules in a reference frame defined by the reference standard, and fixing the first and second optical components in prealignment mounts in to order to further provide "excellent coupling efficiency" thereby obtaining high yield (see col. 2, lines 53-59) by defining a specific frame where high coupling efficiency can be achieved.

Referring to claim 19, Ackerman et al., Aoyagi et al. and Setoguchi disclose the method previously recited. However, Ackerman et al. does not disclose the method of compensating for optical variations in the optical components.

It would have been obvious to account for optical variations in the optical components in order to improve the performance of the device by compensating for future inconsistencies within the device.

Referring to claim 20, Ackerman et al., Aoyagi et al. and Setoguchi disclose the method previously recited. However, the references do not disclose a third optical module.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a third optical module as claimed in order to increase the capabilities of the device by extending the alignment method to another optical coupling, thereby improving the coupling efficiency of a more complicated device. Moreover, it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co..*, 193 USPQ 8.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ackerman et al., Aoyagi et al., and Setoguchi et al., in view of Green et al.

Ackerman et al., Aoyagi et al. and Setoguchi et al. disclose the device previously recited. However, the references do not disclose that the first optical component can move with six degrees of freedom relative to the reference features prior to being fixed to the first prealignment mount.

Green et al. discloses an optical component that can move with six degrees of freedom (see col. 4, lines 61-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first optical component move with six degrees of freedom relative to the reference features prior to being fixed to the first prealignment mount in order to provide a period of adjustability before fixing the component onto the substrate, thereby insuring precision alignment. Moreover, such a modification allows "optimal coupling" (see col. 4, lines 63-64).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H Kim whose telephone number is (703)305-4791. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703)305-3492. The fax phone numbers for the

organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Richard H Kim
Examiner
Art Unit 2882

RHK
May 7, 2003